

Cost comparison, CF versus LED lamp array, equal output, present value discounted, Massachusetts electricity rates

Massachusetts retail electricity rates, residential, total industry, U.S. EIA

Year kWh Ord. http://www.eia.gov/electricity/data/state/avgprice_annual.xls (October, 2014)

1990 \$0.0966 0 SUMMARY OUTPUT

1991 \$0.1040 1

1992 \$0.1062 2 *Regression Statistics*

1993 \$0.1100 3 Multiple R 0.812482

1994 \$0.1109 4 R Square 0.660128

Adjusted R

1995 \$0.1126 5 Square 0.643943

1996 \$0.1125 6 Standard Error 0.014171

1997 \$0.1159 7 Observations 23

1998 \$0.1060 8

1999 \$0.1009 9 ANOVA

				<i>Significance</i>		
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>F</i>	
2000 \$0.1053 10	Regression	1	0.00819	0.00819	40.7879	2.49E-06
2001 \$0.1247 11	Residual	21	0.004217	0.000201		
2002 \$0.1089 12	Total	22	0.012407			

2004 \$0.1172 14

		<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
2005 \$0.1325 15	Intercept	0.093972	0.005722	16.42328	1.85E-13	0.082072	0.105871	0.082072	0.105871
2006 \$0.1640 16	X Variable 1	0.002845	0.000445	6.38654	2.49E-06	0.001919	0.003771	0.001919	0.003771

2008 \$0.1740 18

2009 \$0.1666 19

2010 \$0.1431 20

2011 \$0.1449 21

2012 \$0.1477 22

2013 \$0.1594

2014 \$0.1622

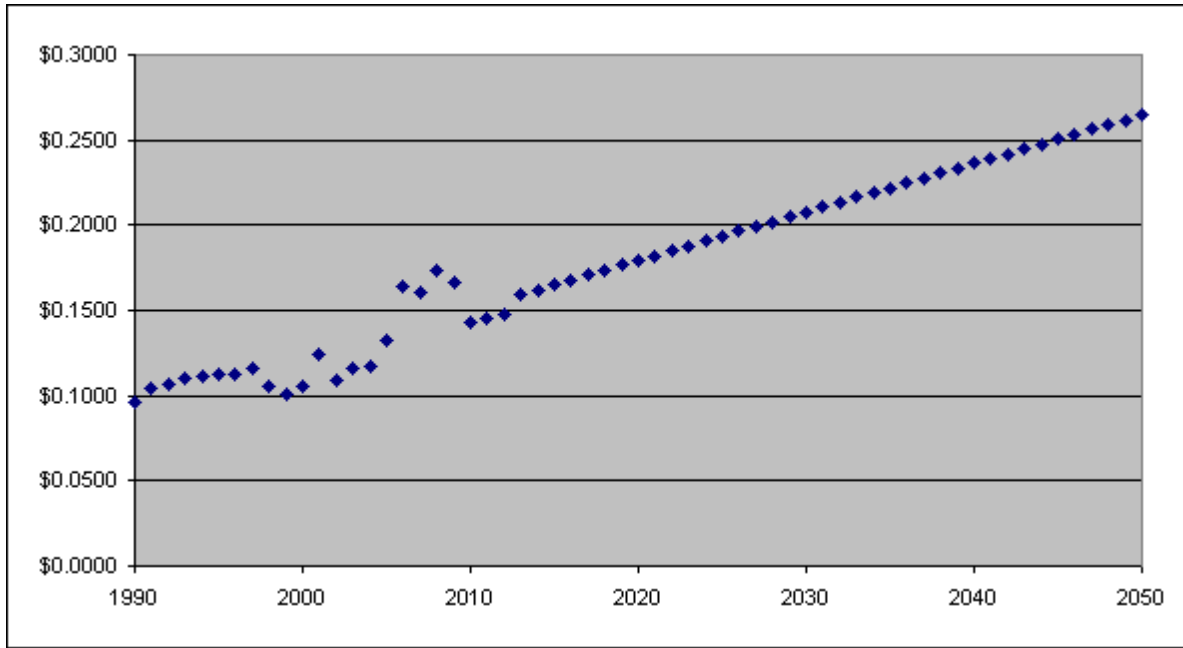
2015 \$0.1651

2016 \$0.1679

2017 \$0.1708

2018 \$0.1736

2019 \$0.1765
 2020 \$0.1793
 2021 \$0.1822
 2022 \$0.1850
 2023 \$0.1879
 2024 \$0.1907
 2025 \$0.1935
 2026 \$0.1964
 2027 \$0.1992
 2028 \$0.2021
 2029 \$0.2049
 2030 \$0.2078
 2031 \$0.2106
 2032 \$0.2135
 2033 \$0.2163
 2034 \$0.2191
 2035 \$0.2220
 2036 \$0.2248
 2037 \$0.2277
 2038 \$0.2305
 2039 \$0.2334
 2040 \$0.2362
 2041 \$0.2391
 2042 \$0.2419
 2043 \$0.2447
 2044 \$0.2476
 2045 \$0.2504
 2046 \$0.2533
 2047 \$0.2561
 2048 \$0.2590
 2049 \$0.2618
 2050 \$0.2647



Present value comparison, light emitting diode versus compact fluorescent lamp

Factor	CF	LED
Mfgr	Ecosmart	Cree
Model	423-599	A1960W27K
Life, years	9	25
Color temp.	2700K	2700K
Lumens ea	900	800
Watts ea	14.0	9.5
Lamp cost	\$1.50	\$10.00
Count	8	9
Lumens	7200	7200
Watts	112.0	85.5
Discount	6.0%	6.0%
Hours/yr	1000	1000

Costing	CF			LED			Difference	
	Hardware	Electricity	Pres. Val.	Hardware	Electricity	Pres. Val.	Annual	Total
2015	\$12.00	\$147.92	\$159.92	\$90.00	\$127.04	\$217.04	\$57.12	\$57.12
2016	\$0.00	\$150.47	\$141.44	\$0.00	\$129.23	\$121.47	-\$19.97	\$37.15
2017	\$0.00	\$153.02	\$135.21	\$0.00	\$131.42	\$116.12	-\$19.09	\$18.06
2018	\$0.00	\$155.57	\$129.21	\$0.00	\$133.61	\$110.97	-\$18.24	-\$0.19
2019	\$0.00	\$158.12	\$123.45	\$0.00	\$135.80	\$106.02	-\$17.43	-\$17.62
2020	\$0.00	\$160.67	\$117.92	\$0.00	\$137.98	\$101.27	-\$16.65	-\$34.26
2021	\$0.00	\$163.22	\$112.60	\$0.00	\$140.17	\$96.70	-\$15.90	-\$50.16
2022	\$0.00	\$165.77	\$107.50	\$0.00	\$142.36	\$92.32	-\$15.18	-\$65.34
2023	\$0.00	\$168.32	\$102.60	\$0.00	\$144.55	\$88.11	-\$14.49	-\$79.82
2024	\$12.00	\$170.86	\$104.78	\$0.00	\$146.74	\$84.08	-\$20.70	-\$100.52
2025	\$0.00	\$173.41	\$93.40	\$0.00	\$148.93	\$80.22	-\$13.19	-\$113.71
2026	\$0.00	\$175.96	\$89.09	\$0.00	\$151.12	\$76.51	-\$12.58	-\$126.29
2027	\$0.00	\$178.51	\$84.96	\$0.00	\$153.31	\$72.96	-\$11.99	-\$138.28
2028	\$0.00	\$181.06	\$81.00	\$0.00	\$155.50	\$69.56	-\$11.44	-\$149.72
2029	\$0.00	\$183.61	\$77.21	\$0.00	\$157.69	\$66.31	-\$10.90	-\$160.62
2030	\$0.00	\$186.16	\$73.59	\$0.00	\$159.88	\$63.20	-\$10.39	-\$171.01
2031	\$0.00	\$188.71	\$70.12	\$0.00	\$162.07	\$60.22	-\$9.90	-\$180.91
2032	\$0.00	\$191.26	\$66.80	\$0.00	\$164.25	\$57.37	-\$9.43	-\$190.34
2033	\$9.33	\$193.81	\$66.70	\$0.00	\$166.44	\$54.65	-\$12.05	-\$202.38
2034	\$0.00	\$196.35	\$60.60	\$0.00	\$168.63	\$52.04	-\$8.56	-\$210.94
2035	\$0.00	\$198.90	\$57.70	\$0.00	\$170.82	\$49.56	-\$8.15	-\$219.09
2036	\$0.00	\$201.45	\$54.94	\$0.00	\$173.01	\$47.18	-\$7.76	-\$226.84
2037	\$0.00	\$204.00	\$52.29	\$0.00	\$175.20	\$44.91	-\$7.38	-\$234.23
2038	\$0.00	\$206.55	\$49.77	\$0.00	\$177.39	\$42.74	-\$7.03	-\$241.25
2039	\$0.00	\$209.10	\$47.36	\$0.00	\$179.58	\$40.67	-\$6.69	-\$247.94